

LEWIS, DURBIN & LEWIS.

Machine for Raking and Loading Hay.

No. 49,423.

Patented Aug. 15, 1865.

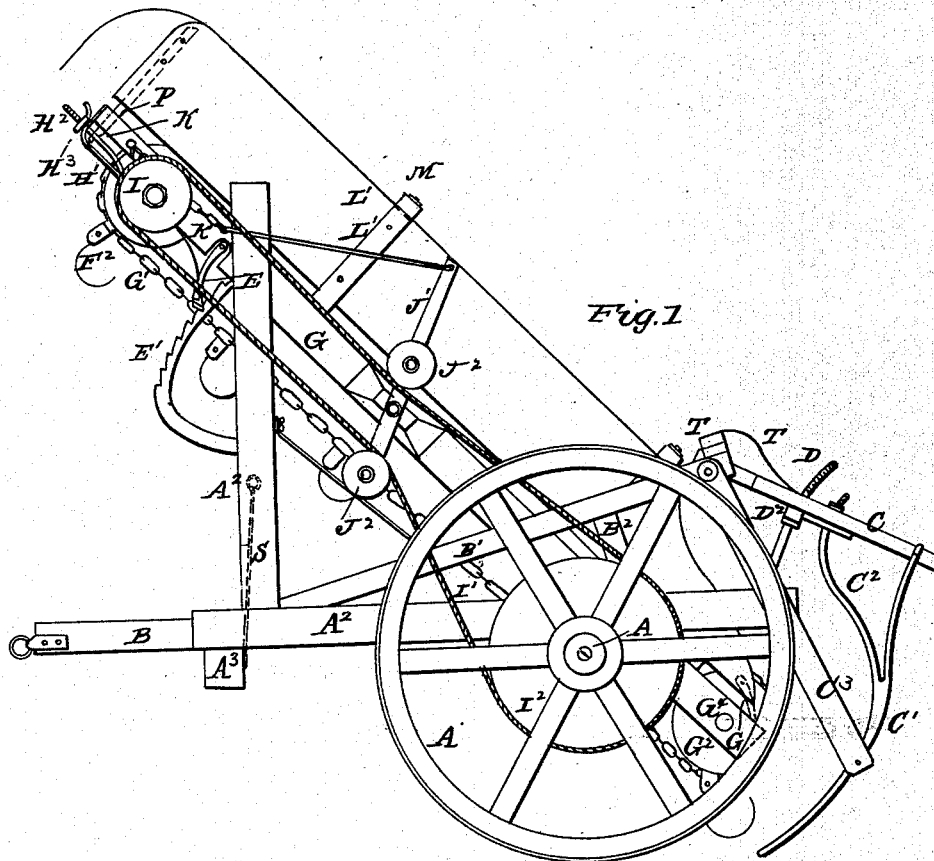


Fig. 1

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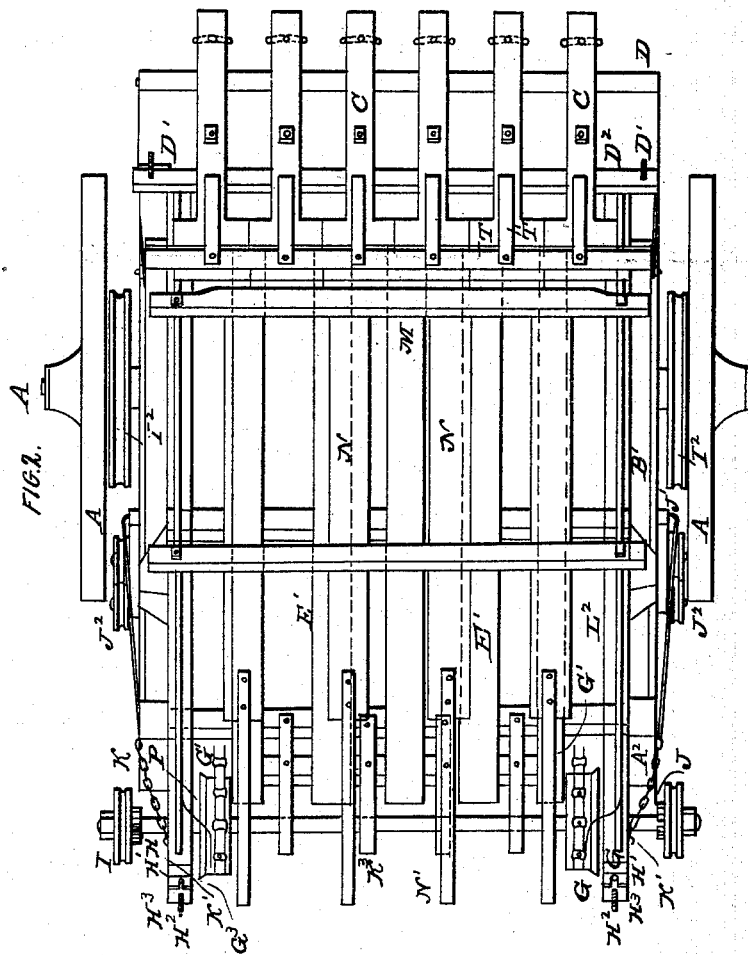
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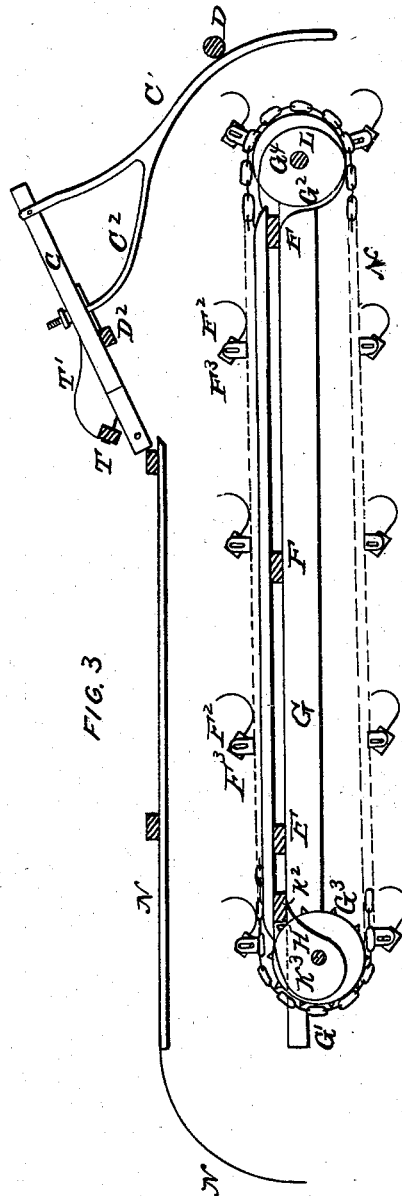
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UNITED STATES PATENT OFFICE.

MILES K. LEWIS, JOHN C. DURBIN, AND LYMAN P. LEWIS, OF IOWA CITY,
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IMPROVEMENT IN MACHINES FOR RAKING AND LOADING HAY.

Specification forming part of Letters Patent No. 49,423, dated August 15, 1865.

To all whom it may concern:

Be it known that we, MILES K. LEWIS, JOHN C. DURBIN, and LYMAN P. LEWIS, all of Iowa City, Johnson county, and State of Iowa, have invented certain new and useful Improvements in Machines for Raking and Loading Hay, Grain, &c.; and we do hereby declare that the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use our said invention or improvements without further invention or experiment.

The nature of our invention and improvements consists in the construction, arrangement, and combination of devices hereinafter described and claimed.

Figure 1 is a side elevation of our machine. Fig. 2 is a plan of the top. Fig. 3 is a section of the machine, cut lengthwise.

In these drawings the same letters indicate like parts in each of the figures.

A A are the wheels on which the machine travels. A' is the axle. A² A² are the side rails of the frame, fastened to the axle and to the front bar, A³.

The draft-bars B B are fastened to the rails A² and diagonally across the front bar, A³, so as to brace and stiffen the frame of the machine. The inclined bars B' are fastened to the rails A², and are supported by the standards B², and their rear ends support the bar, which passes through the rake-heads C C, and upon which they vibrate. These rake-heads are made in the form shown in the drawings, and the teeth C' C' are also made in the form shown, with two prongs at their upper ends, which project up each side of the head and at its rear end, and a pin is put through the prongs and the head, on which the tooth C' vibrates. There is a third prong, C², projecting from the front side of the tooth and passing up through the center of the head, through which it works up and down freely, and it has a screw-nut on the end to prevent it from being drawn out.

There are two bars, C³, fastened to the rear ends of the inclined bars B' and rails A², to

carry and support the bar or roller D behind the teeth C', so that when the teeth are stopped by any obstruction the roller D overtakes them and they rise up and pass over it (the obstruction) and then drop down again.

The curved rods D' are fastened in the rails A², to support the bar D² under the rake-heads, which bar may be adjusted higher or lower by the screw-nuts on the rods to adjust the heads and teeth as desired.

The vibrating rails G are fastened to the rails A² by screws or bolts, so as to vibrate freely, and their upper ends are supported by the pawls E, which catch into the notches in the arched plates E' fastened to the standards B², which are fastened in the front ends of the rails A², and between which standards the rails G vibrate as they are adjusted higher or lower to suit the condition of the cart or wagon being loaded.

The rails G G are connected by the bars F F, which are fastened to them, and to which bars the slats F' are fastened to support the hay-carriers F², which consist of a revolving bar armed with hooks to catch and take up the hay from before the rake-teeth and carry it up and deposit it onto the cart or wagon to be loaded.

The carriers or revolving bars are provided with crank-pivots F³, which turn in projections from the links of the chains G' G', which pass around the pulleys G² on the shaft G⁴ in the lower ends of the rails G and the pulleys G³ on the shaft H, which turns in boxes under the upper ends of the rails G, which boxes are arranged to traverse between the rails G and the straps H', fastened to the rails. These boxes are moved to tighten the chains by the screws H², fastened to them and acted on by the nuts H³.

The pulleys G³, which carry the chains, are provided with short spurs, which enter the circular links of the chain and prevent the pulleys from slipping under it. The shaft H of these pulleys is turned by the pulleys I I, acted on by bands L' from the pulleys L², fastened to the carrying-wheels A.

The pulleys I I turn freely on the shaft H, and are provided with spring-pawls, which

catch into the ratchet-wheels J when the pulleys are turned forward; but when turning the machine the shaft is carried by the pulley that turns fastest and turns freely in the pulley that turns slowest.

As raising or lowering the rails G will tighten or slacken the bands I', we fasten pivots to the rails G and hang the levers J' on them, and fasten one or two pivots in them for the tightening-pulleys J²; and to vibrate the lever to tighten the band we fasten the rod and chain K to it, and move the lever to make the band as tight as required, and hitch the chain onto the hook K', to hold the lever in place and keep the band tight.

To prevent the hay from catching and winding on the shaft H, we fasten a short bar, K², across under the upper ends of the slats F'. To this bar K² and the upper bar F we fasten the bows K³ between the slats F', which bows extend around the shaft and some distance from it and conduct the hay over the shaft H; and to prevent the hay from catching and winding on the shaft G⁴ we make a sheet-metal shield, L, nearly as large as the pulleys G², to surround the shaft G⁴, and fasten the upper edge of the shield to the slats F' and the lower edge to the bar F, so that the revolving bars F² are carried around the shield by the chains G'.

To prevent the wind from blowing the hay off of the carriers as it is carried up, we fasten some standards, L', to the rails G to hold the boards L² each side of the carriers; and to the top of the standards L' we fasten the bars M, and to the under side of these bars the slats N, which form a rack over the hay as it is carried up.

The curved rods N are fastened to the upper

ends of the slats N to direct the hay downward from the carriers F².

There are some stops, P, fastened to the inside of the boards L² at their upper ends, against which stops the cranks of the carriers are carried to turn the carriers, so as to draw the hooks from the hay and let them fall between the bows K³ as the carriers pass around the pulleys G³.

To prevent the hay from catching on the ends of the rails G and boards L², we fasten a bent-iron strap, Q, to the ends of the rails and inner sides of the boards.

The braces S, from the bar A³ to the standards A², serve to support the standards. The bar T is fastened on the top of the rear ends of the bars B', to carry the springs T' to press down the rake-heads and teeth.

Having described our invention, we will now state what we desire to secure by Letters Patent:

1. A three-pronged rake-tooth hinged to a vibrating head by two of its prongs, so as to vibrate on the head, and with the third prong working up and down through the head, substantially as described.

2. In combination with the raking-teeth, the roller D, arranged behind the teeth, for the purpose set forth.

3. The adjustable bar D², to support the rake-heads, as described.

4. The straps Q, in combination with the boards L² and rails G, as described.

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